ABSTRACT OF THE DISCLOSURE

The invention relates to a high sensitivity receiver installed outdoors which may be used in a base station of a mobile communication system, for example. A received radio frequency signal is converted into a signal in a desired frequency band by a reception bandpass filter RXF3, is subject to a low noise amplification to a desired level by a low noise reception amplifier LNA4, and the amplified signal is converted into an optical signal by a laser diode LD5. RXF3, LNA4 and LD5 are confined in a heat shielding box. LD5 is cooled by cooling means to the order of critical temperature where RXF3, for example, assumes a superconducting state, whereby the dynamic range is increased and stabilized.